

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

### Laxative Chewing Gum.

We, HEALTH PRODUCTS CORPORATION, a corporation organized and existing under the laws of the State of New York, United States of America, having a place of business at 1170, Broadway, Borough of Manhattan, City, County and State of New York, United States of America (Assignees of ALBERT HENRY COURT, a subject of the King of Great Britain, residing at and whose post office address is Belleville, County of Essex, State of New Jersey, United States of America), do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

It is already known to incorporate phenolphthalein and other pharmaceutical preparations with chewing gum to facilitate their absorption into the system; it has also been proposed to incorporate caffeine, its chemical equivalent or derivatives thereof in a coating for chewing gum, which coating might consist of the usual candy preparation or any other suitable material.

This invention relates to an improved laxative chewing gum, or chewing gum laxative, and includes a new method of making the new laxative chewing gum, as well as the new laxative chewing gum itself, as a new product, when prepared or produced by the special method or process of manufacture in question.

The new laxative chewing gum product of the present invention is a composite product having an inner central gum portion which may or may not contain phenolphthalein and a plurality of layers

or coatings surrounding said central portion and forming the composite chewing gum product therewith. The plurality of layers or coatings are of dissimilar character, and one of them is a layer of a specially active phenolphthalein preparation, or a layer containing such special phenolphthalein, while another or other layers are candy or sugar layers.

The invention provides a new chewing gum product containing a specially active phenolphthalein, namely, yellow phenolphthalein. This product is obtained in the manufacture of phenolphthalein (according to the method given in the British Pharmaceutical Codex, 1923, page 826) after the removal of the usual impurities and soluble by-products and the precipitation with acetic acid but before the decolorization by charcoal and final crystallization; it is a yellowish coloured product in a very finely divided state, much more soluble than the hard crystallized white product, and it owes its increased action in large part to its quicker rate of absorption, due to its increased solubility.

Because of its properties, this phenolphthalein presents difficulties in its use when applied as a coating layer to chewing gum. It can, however, readily and advantageously be so employed by the process of the present invention.

According to the process of the present invention, pieces of chewing gum stock somewhat smaller than the final size of the product are subjected to a plurality of coating operations, one of these coating operations resulting in the deposition of the yellow phenolphthalein, and other

[Price 1/-]

or others of the coating operations applying a sugar coating, so that the product of the multi-stage coating operations is a composite product, having a composite  
 5 outer portion made up of a plurality of layers of dissimilar material, one of them containing the yellow phenolphthalein.

The invention will be further illustrated by the following more detailed  
 10 description.

A suitable chewing gum stock is made up of chicle and chicle substitute, together with sugar, etc. and a batch of this stock is cooked in a steam-heated  
 15 kettle. The term "chicle-substitute" is intended to include any suitable material of a gum-like nature for example, stearin, beeswax, solid paraffin, and the resinous concretions or saps from certain  
 20 trees, which form a continuous gum-like mass practically insoluble in secretions of the mouth and of the general behaviour of ordinary chewing gum when masticated. For a batch of 236 pounds, the  
 25 formula may consist of 30 pounds of chicle substitute, 6 pounds of chicle, 50 pounds of glucose, 125 pounds of finely powdered white sugar and 25 pounds of cuttings, i.e., pieces of previously manufactured gum stock. This compound is  
 30 cooked about one to one and one-half hours. Before removing it from the kettle, small amounts of flavoring material may be added, for example,  
 35 small amounts of wintergreen and peppermint. Also more or less phenol phthalein may be incorporated with the batch before it is removed from the kettle. The yellow phenolphthalein may  
 40 advantageously be weighed out and stirred into the gum as it is undergoing cooking in the steam-heated kettle.

The batch of gum material, after cooking, is removed from the kettle, and  
 45 kneaded, with the addition of powdered sugar and then rolled out into slabs and cut up into tablets.

These tablets are put into a revolving pan and subjected to a tumbling and  
 50 coating operation with the addition thereto of coarse powdered sugar and syrup with the result that the tablets are smoothed and given a filling coating so that the tablets have a smooth surface.  
 55 An air blast is not used during this operation, but when the tablets have been given a smooth and still moist surface, the finely divided phenolphthalein is gradually added while the tumbling in the revolving pan is continued. The  
 60 gradual addition by sifting of the finely powdered phenolphthalein results in a uniform distribution of the fine phenolphthalein over the still moist and sticky  
 65 surfaces of the chewing gum tablets.

When the proper amount of phenolphthalein to be added has thus been incorporated, an air blast is turned on and the coating is dried while continuing  
 70 the tumbling operation in the revolving pan. In this way, the yellow phenolphthalein forms a coating layer which adheres to the tablet and which gives, at the end of the coating and drying  
 75 operation, a tablet having an outer yellow layer containing the phenolphthalein. The amount of phenolphthalein can be regulated, for example, so that each tablet will contain approximately one and one-half grains of  
 80 phenolphthalein, this being in part incorporated with the inner chewing gum composition, and in part incorporated in the coating layer applied to the chewing gum center.  
 85

The yellow coated tablets, after drying in the revolving pan, are taken out and may be permitted to dry for a further period. They are then subjected to a  
 90 further coating operation, or to further coating operations, by putting them in a revolving tumbling pan and adding sugar syrup thereto and applying an air blast to dry the syrup to form a sugar  
 95 coating.

The application of such a further layer, or of a plurality of further layers, of  
 100 sugar coating in this way, gives a finished tablet of white and pleasing appearance, with the yellow layer of phenolphthalein between the outer sugar layers and the inner chewing gum center.

The syrup used for forming the outer sugar layers may advantageously be a  
 105 simple sugar syrup with wintergreen or peppermint or other flavoring material added thereto. The syrup used for the coating to which the yellow phenolphthalein is applied advantageously contains other material and sugar, for  
 110 example, it may be made up for the most part of sugar, together with small amounts of glucose syrup and a small amount of gum arabic, with a small  
 115 amount of corn starch incorporated in the syrup. A suitable syrup may thus be made from 7 pounds of sugar, 2-1/2  
 120 pounds of glucose and 4 ounces of gum arabic. In using this syrup, the amount of coarse powdered sugar may amount, for example, to about 4 pounds of sugar for a batch of about 108 pounds of the  
 125 gum tablet, and about 2 pounds of corn starch may advantageously be used, added with the sugar. The use of such  
 130 a syrup, together with the powdered sugar and starch, gives a layer to which the yellow phenolphthalein will adhere, and which, when dry, gives an adhering layer of the yellow phenolphthalein. The

incorporation of the yellow phenolphthalein in the syrup itself, before applying the syrup to the tablets, and its application in that way, presents some difficulties, but the material can advantageously be applied in powdered form in the manner above described; and, after suitable drying, an added layer, or added layers, of plain syrup can be added to give the hard outer sugar coating.

The final product, therefore, is a composite chewing gum product, with a central gum portion, and plurality of outer layers, one of which contains the phenolphthalein, and another or others of which form an outer coating layer of a pleasing white appearance.

It will thus be seen that the present invention provides a process made up of two or more successive coating operations, in one of which the yellow phenolphthalein in powdered form is applied to the gum tablets which have been moistened with a suitable syrup so that, after the drying of the resulting layer, the tablets possess a yellow coating of an adherent nature, containing the phenolphthalein; thereafter, the tablets are further coated by applying one or more coatings of syrup thereto which are dried to give an outer sugar coating to the tablet, so that the yellow phenolphthalein layer is concealed and a white sugar coated composite product produced.

The composite chewing gum product of the present invention contains the phenolphthalein as a part of the composite coating, and it may also contain part of the phenolphthalein in the central gum portion of the chewing gum product. This arrangement of the phenolphthalein in the gum facilitates its separation and assimilation when the gum is chewed, so that for the most part it becomes available during the early period of the chewing of the gum.

The manufacture and nature of the new composite chewing gum product is illustrated conventionally and diagrammatically in the accompanying drawing.

Figure 1 shows a section of a gum tablet formed of suitable chewing gum formula, before any coating is applied thereto. This gum tablet may or may not contain phenolphthalein incorporated therewith.

Figure 2 shows the tablet with the first layer applied thereto. This layer, when the process is carried out in accordance with the preceding specific description, is a layer formed of syrup with added sugar and starch, and with the yellow phenolphthalein gradually sifted upon the tablets as they revolve in the

revolving pan, followed by drying after the phenolphthalein is applied, so that the layer contains the phenolphthalein embedded in and held by the syrup and sugar layer.

Figure 3 is a similar sectional view of the tablet after it has had a further sugar layer applied thereto, and,

Figure 4 is a similar sectional view of the completed tablet with two added sugar layers applied thereto. The tablet in its finished form is illustrated in Figure 5. It will be evident that the form and shape of the product can be somewhat varied while retaining the characteristic features of the process and of the composite product.

We are aware that it is well known in the crystallizing of sweetmeats, fruit and similar comestibles, to moisten the surface of the sweetmeats or other goods and to agitate them in a pan with a small quantity of the substance, in granular form, with which it is desired to coat them, for example, coker nut, cocoa, or sugar; the moistened goods are then discharged from the pan on to a bench or table where they are thoroughly coated with the aforesaid granular material. The solution or syrup for the final crystallizing coat, prepared from water and sugar, is then conducted to a suitably arranged trough, into which the sweetmeats are dipped in a basket, the latter being then removed and drained and the goods allowed to dry.

The present invention is limited to the preparation of chewing gum which is to be merely chewed and not swallowed, the problem consisting in the incorporation of an insoluble or difficultly soluble substance with a vehicle which is made up largely of insoluble substances, in such a manner that the phenolphthalein can nevertheless be removed from the gum to a sufficiently large extent by the chewing operation, due to its presence in one of the outer layers or coatings. The application of a sugar coating to chewing gum is of course well known, but in the present instance it serves to form a hard protective crust and to afford a pleasing appearance for the laxative product.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. The method of producing a composite laxative chewing gum product, which comprises applying yellow phenolphthalein in powdered form to gum tablets moistened with a syrup, drying the resulting layer, and applying one or more coatings of syrup thereto which are

dried to give an outer sugar coating of the tablet.

2. A composite chewing gum product, when prepared or produced by the special method or process of manufacture described and claimed in Claim 1, comprising an inner gum portion and a composite outer coating therefor made up of a plurality of layers, an inner layer con-

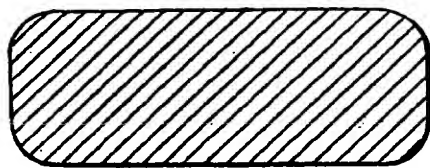
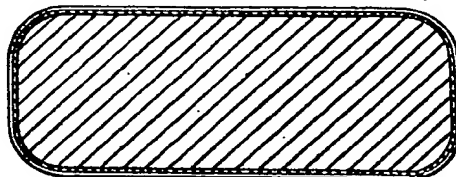
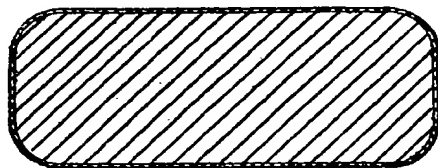
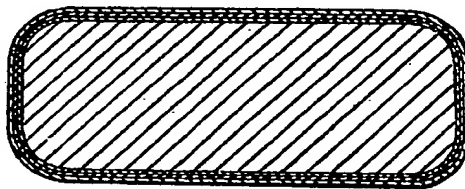
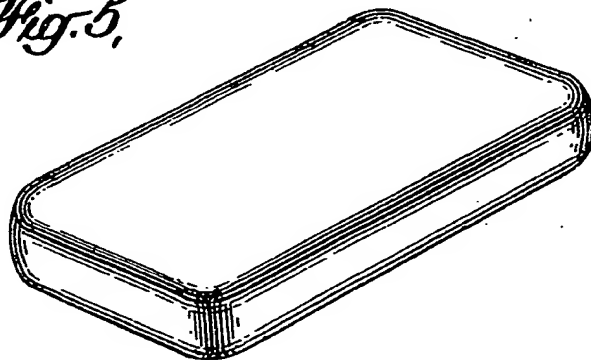
taining yellow phenolphthalein, and the 10 outer layer being a sugar layer.

Dated this 17th day of December, 1925.

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*Fig. 1,**Fig. 3,**Fig. 2,**Fig. 4,**Fig. 5,*

[This Drawing is a reproduction of the Original on a reduced scale.]

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